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ABSTRACT

This document is a report on the performance, graduation, and transfer of immigrant and native minority students at City University of New York (CUNY) community colleges. The study also compares the experiences of immigrants at CUNY community colleges to those of native United States minorities. A total of 8,332 students responded to the survey, approximately 48% of whom were immigrants or were born abroad. The study indicates that: (1) the largest percent of foreign-born community college students were from Caribbean, Central, and South American countries; (2) immigrants often have trouble passing educational assessment tests in math and reading due to the lack of English-language knowledge and comprehension; (3) the transfer rate of immigrants is not much higher than that of native minorities; (4) factors like parents' education and wealth positively affect academic success for immigrants and native minorities; (5) overall, immigrants are not shown to be more likely to transfer or graduate than native minorities; (6) African-Americans and Hispanics who transfer show a significantly lower probability of earning a bachelor's degree than whites; and (7) students who enter dual two-/four-year CUNY institutes are more likely to transfer and earn a bachelor's degree. The report includes 17 references, 13 statistical tables, and implications for future studies. (MKF)

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PERFORMANCE, GRADUATION, AND TRANSFER OF IMMIGRANTS AND NATIVES IN CITY UNIVERSITY OF NEW YORK COMMUNITY COLLEGES

Thomas Bailey
Teachers College, Columbia University

and

Elliot Weininger
City University of New York Graduate Center

March 2002

Working Paper #2

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For additional copies please contact-
Community College Research Center
Teachers College, Columbia University
525 W. 120th Street, Box 174
New York, New York 10027
212-678-3091 (telephone)
212-678-3699 (fax)

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INTRODUCTION

New York City has always attracted a significant share of the foreign-born newcomers to the United States, but during the last two decades the growth of the city's immigrant population has accelerated. In 1990, according to the U.S. Census, 28.2 percent of the city's population was foreign born. By 1999, 42 percent of the city's population was born abroad. Russia has provided the largest single source of growth, but Mexico, the Dominican Republic, other Caribbean countries, Pakistan, China (including Taiwan and Hong Kong), India, and the Philippines all contributed thousands of newcomers.[1]

As a growing share of the city's population, immigrants have played a crucial role in the city's economic growth over the last two decades. These newcomers have been at the core of the revitalization of many neighborhoods. Not only have immigrants filled many of the city's service and manufacturing jobs, but they have also generated many jobs through the growth of their own businesses. And in addition to these traditional immigrant roles, the foreign born have also become important contributors to higher-level technical positions. The hiring of foreign-born information technology workers has attracted a great deal of attention, and they have played a role in New York City's own Silicon Alley. Of course many of these immigrants did arrive with skills, but many others are picking up their advanced skills in New York, particularly at the schools of the City University of New York (CUNY). This education is acquired either by young immigrants whose parents brought them to New York, or by older immigrants who came as adults and look to CUNY for the skills they need to meet the economic goals that often brought them here in the first place.

This paper examines the experience of immigrants and native minorities in CUNY during the 1990s. The popular image is that CUNY plays a central role in providing economic opportunity to immigrants, but here we consider the data: Have immigrants gained access to CUNY? Do they attend CUNY in disproportionate numbers? How much education do immigrants who enroll in CUNY actually acquire, and do they earn degrees? In the end, how would we evaluate CUNY's success in providing an educational foundation for recent arrivals?

We focus here on immigrant enrollment in community colleges and two-year, associate degree programs in the senior colleges. In the U.S., community colleges are designed to facilitate access to higher education for all groups, including individuals with weaker academic skills, lower incomes, and other characteristics that create barriers to

further education. And indeed, nationally, these colleges do enroll large numbers of low-income students, minorities, and students whose parents did not go to college (National Center for Education Statistics, NCES, 1999). One of our goals is to determine whether the two-year programs play this type of role in CUNY.

The differentiation of roles of the two- and four-year programs is particularly controversial at CUNY. The 1999 Report of the Mayor's Task Force on the City University of New York, *The City University of New York: An Institution Adrift* (Schmidt et al., 1999, hereafter referred to as the Schmidt Report), called for a significant reduction in remediation at CUNY's four-year colleges. In principle, henceforth all students in need of remediation, with some important exceptions, would receive it at CUNY's two-year schools. This was potentially a major change, since previously a sizeable minority of the entering students at the four-year schools failed assessment tests and were judged to need remediation. But this change is also taking place while CUNY is potentially being called on to absorb a huge influx of immigrants. By understanding the relative roles of the two- and four-year schools in educating the foreign born, we can get a better idea about what influence this policy might have and how it will interact with the growth of the city's immigrant population.

Throughout our analysis, we compare the experience of immigrants to those of native minorities. There is a long tradition of this type of comparison in social science research, with an emphasis generally on why immigrants appear to enjoy more educational and economic success than some native groups. In addition, the comparison provides insights into the different barriers faced by these disparate groups. The comparison also allows us to discuss whether the influx of immigrants is in some way limiting the access of natives to the educational opportunities represented by CUNY.

In the following section of the paper, we discuss the relevant research literature. While there has been some research on the educational attainment of immigrants, there is very little specifically covering the role of community colleges. We describe the data that form the basis of the subsequent analysis, which seeks first to determine the extent to which immigrants enroll in CUNY, especially in the CUNY community colleges, and how the rates compare with the immigrant share of the population. We also analyze immigrant enrollment in both the two- and four-year programs. (Since some CUNY colleges have given both associate and bachelor's degrees, we focus on enrollment in programs rather than in institutions.) In both of these sections, we compare immigrants to native-born minorities and also differentiate among immigrant groups. One differentiation that we find particularly interesting is the contrast between foreign-born

students who graduated from a U.S. high school and those who received their secondary schooling abroad. After studying the factors that influence the allocation of different groups in two- and four-year programs, we then consider the experience of students who start in two-year programs, comparing total credit accumulation, associate degree completion, and transfer for various foreign-born and native-born groups. We end with conclusions and policy implications.

AN OVERVIEW OF IMMIGRANT EDUCATIONAL ATTAINMENT

There is very little research that focuses particularly on the experience of immigrants in community colleges. One exception was a 1996 RAND Corporation report on the education of immigrants, although even in that report the discussion of community colleges was brief and superficial (Vernez & Abrahamse, 1996). To the extent that that study generated insights into community colleges, the authors concluded that race and ethnicity were more important factors than nativity. That is, after taking account of race and other personal characteristics, an individual's place of birth—abroad or in the United States—did not have any independent influence on college enrollment and completion.

Researchers have studied immigrants in education in general and much of that research emphasizes that the relationship between nativity and education differs by ethnic group. Rong and Grant (1992) concluded that "regressions predicting school years completed show variable generation-by-ethnicity effects. Asian attainment increases sharply between immigrant and child-of-immigrant generations, leveling off thereafter. Hispanic attainment improves with successive generations of U.S. residence. Non-Hispanic white attainment peaks in the child-of-immigrant generation and declines for later generations" (p. 625). Data collected during 1996-7 for the *National Postsecondary Aid Student Survey* also lends some support to the idea that race has a stronger influence than nativity on whether a student enrolls in a two- or four-year program (NCES, 1999). For example, 62 percent of all foreign-born students who were enrolled in college that year were in a two-year program, whereas 61 percent of the native born were, a difference not statistically significant. In contrast, African Americans were much more concentrated in the two-year programs than whites (non-Hispanics): 69 percent for African Americans compared to 60 percent for whites. Hispanics were even more dependent on community colleges: 70 percent.

Some analysts have tried to explain the apparent higher levels of educational attainment among immigrants than among native minorities, especially African Americans. In a controversial argument, Ogbu (1991), for example, emphasizes cultural differences engendered by a group's perceptions of the opportunities open to it in the society. The progress of "caste-like" minorities, such as African Americans, is inhibited by a "low effort syndrome" that initially developed as a coping response to the experience of subordination—and, specifically, formal and informal exclusion from all but the most menial positions—and which leads to the emergence of an "oppositional culture" (*vis-à-vis* all institutions controlled by the dominant group) that becomes entrenched, such that it continues to influence behavior even after the group's situation has been transformed.

Asians have attracted a great deal of attention because of their high rates of educational attainment. A popular notion is that Asians have a particular cultural value that promotes education, but Sue and Okazaki (1990) argue explicitly against an "Asian values" explanation. Hirschman and Wong (1986) invoke selective immigration, as well as historical exclusion from certain occupations, such as crafts, leading to an emphasis on other avenues of mobility (including education), as explanations for greater Asian attainment. But none of this research directly addresses the role of community colleges in the educational attainment of immigrants or in the differences between immigrant and native minority education levels.

In contrast to research on the situation in the U.S. as a whole, CUNY analysts have conducted some research on the experience of immigrants in the University, including some analysis of the differences among two- and four-year institutions (CUNY, 1995). Their report pointed out that more than one-third of the first-time CUNY freshmen in 1990 were born abroad (and almost all of those were not U.S. citizens), when only about 28 percent of the city's population was not born in the U.S. Moreover, the report predicted that by the year 2000 the foreign born would account for almost one half of the starting freshmen.

This paper builds on the CUNY study in two broad ways. First, we focus particularly on the two-year colleges. Although the CUNY research provides some comparisons between students in two- and four-year programs, we carry out a much more detailed analysis of the determinants of enrollment in the two types of programs, and add a consideration of native minorities, something not done by the CUNY researchers. Second, the CUNY report does not analyze educational outcomes. Access to postsecondary education is certainly an important issue, but what students do with that

access—that is, how much education they actually accumulate—is also important. Moreover, in research on higher education in general, analysts have paid much less attention to educational outcomes than they have to access and enrollment.

A focus on the relative roles of the two- and four-year programs and colleges is particularly important at this time given the controversy in New York, and indeed in the country as a whole, about the relative roles of these two types of institutions and programs. First of all, community colleges enroll a far larger percentage of college students than most people realize. For example, while most of the controversy at CUNY has focused on the four-year colleges, in 1997, almost two thirds of CUNY first-time, first-year students enrolled in associate degree programs.[2] As immigration has accelerated in the last decade, community colleges appear to be institutions that are well suited to provide access to higher education for these newcomers. Thus we would expect immigrants, especially recent immigrants, to be particularly concentrated in the two-year institutions.

The roles of the different programs are a particularly important issue for CUNY and other higher education systems that have sought to shift remediation from the four-year to the two-year programs. In the wake of the 1999 publication of the Schmidt Report, the CUNY administration promulgated a policy that remediation would no longer take place at the four-year schools, only at the community colleges. Advocates of this policy suggest that eliminating remediation from the senior colleges would raise standards at those institutions and help strengthen their educational benefits for those students who are already prepared to do college level work (MacDonald, 1994; Schmidt, et al., 1999). But critics of the increased CUNY selectivity feared that it would restrict opportunities for the immigrants and minorities ("An Assault," 1998). According to their perspective, restricting access to the senior colleges is a serious impediment to mobility because a bachelor's degree is considered the key to economic opportunity, and enrollment in a community college lowers the probability of earning a BA (Dougherty 1994; Lavin & Hyllegard, 1996). Therefore, critics assert, access to the four-year schools is the most important indicator of the extent to which the university provides economic opportunity.

The controversies about enrollment in the two types of programs go well beyond the specific issues of concern to CUNY. The large majority of traditional-aged college students, including those in community colleges, state that they would like to earn at least a bachelor's degree, yet students in two-year programs are much less likely to complete a BA than those in four-year programs (Dougherty, 1994). Alternatively, community

college advocates suggest that these colleges offer a step into higher education that would be more difficult if only four-year schools were available. For example, Rouse (1995) found that community colleges did in fact lower the educational attainment of students seeking bachelor's degrees, but they also provided access to higher education for students who probably would not have enrolled in a four-year school. Nevertheless, Rouse's study is based on the existing situation in higher education and does not imply that reforms at the four-year schools might not make them more welcoming to more students, or that reforms at the two-year schools might not make it easier for their students to transfer. Indeed, at root, the CUNY controversy is about how open the four-year schools should be to students who might be expected either to have difficulty succeeding in higher education or to avoid it altogether.

But regardless of the merits of the CUNY policy on remediation, the policy change is taking place in an era, as we have seen, of extreme growth in the enrollment of immigrants at the university. Therefore, it is important to understand whether immigrants are currently concentrated in the two- or the four-year programs and the extent to which they use the two-year programs successfully to accumulate credits and earn degrees.

THE CUNY IMMIGRANT POPULATION

CUNY's Office of Institutional Research and Analysis (OIRA) maintains data files for every fall semester cohort of first-time freshmen entering the University. These files, containing a record for each student in the given cohort, are updated annually. They include a great deal of information collected during the application process, as well as numerous facts about the students' educational careers in the CUNY system.

This paper is primarily built around an analysis of the Fall 1990 cohort. Descriptive statistics are also presented from the Fall 1997 cohort file, however, in order to indicate the nature and scope of certain changes that have occurred in the intervening years. Overall, the 1997 cohort had 25,173 students; the 1990 cohort had 26,575 students. The proportion of foreign-born students in the freshmen cohorts rose dramatically over the course of the 1990s.

Data Sources

Information on students' place of birth comes from the CUNY application form. (This question has been included on the application since 1992.) Data on place of birth are missing for 17.0 percent of the 1997 cohort members; the proportion is somewhat higher for associate degree entrants (18.9 percent) than for bachelor's entrants (13.6 percent).

The application form for 1990 did not include a question on place of birth. However, a survey sent to all the individuals who applied to be first-time freshmen included a question on place of birth, as well as questions about various other aspects of individuals' social background. The survey data for all respondents who entered the University has been merged with their cohort records, and the analyses in this paper draw primarily upon the combined files.

Of the members of the 1990 cohort, 8,332 responded to the survey. In order to adjust for survey non-response, a set of weights was calculated. The weights were devised by running a logistic regression equation predicting the probability of response on the basis of factors for which population-wide data were available (the weight is the inverse of the predicted probability). All of the figures we report for 1990 entrants represent weighted data. Information on place of birth is missing for 18.3 percent of the weighted sample. The proportion is slightly higher for associate entrants (19.5 percent) than for bachelor's entrants (16.3 percent).

Overall Demographics

Many students born abroad get their postsecondary education at CUNY. In 1990, just over 33 percent of the entering students were born abroad (immigrants accounted for about 28 percent of the city's population in 1990). Asia was the homeland of over 22 percent of the foreign-born students (10 percent from China alone) and 21 percent came from South and Central America and the Dominican Republic. Another 50 percent were from the Caribbean (including 9 percent from Puerto Rico[3] and 9.5 percent from Jamaica).

By 1997, 48 percent of the entering class was born abroad. This is perhaps the single most striking finding of this paper. In seven years, the foreign-born share of the

entering cohort rose by 15 percentage points, or 45 percent. Adjusting to a shift of that magnitude would be difficult for any institution.

Table 1 displays demographic information about the cohorts that entered CUNY as first-year students in 1997 and 1990, including the breakdown between those entering two- and four-year programs. A few highlights of this table are worth emphasizing. First, the large majority (82 percent) of the foreign-born students in CUNY attended secondary school in the United States. Second, contrary to our expectations, as a whole, the foreign born were *not* any more concentrated in two-year programs than they were in CUNY as a whole. Indeed, it was the native born who were slightly overrepresented in the associate degree programs—they accounted for 52.2 percent of all starting CUNY students but 53.4 percent of all starting two-year program students. The two foreign-born groups relied somewhat differently on the two- and four-year programs, with immigrants who attended high school abroad slightly overrepresented and the U.S. high school group slightly underrepresented in the two-year programs.

Thus, overall, immigrants were not particularly concentrated in the two-year programs. But the foreign born are not a homogeneous group, as Table 2 demonstrates; it displays the many countries of origin for the immigrant members of the 1990 entering cohort. Here we see that some immigrant groups do in fact rely more on the two-year than on the four-year programs. The Asians are more likely to enroll in the four-year programs while immigrants from the Western Hemisphere are more concentrated in the community colleges. So for some groups, the two-year programs represent an important point of access to the CUNY system.

Racial and ethnic differences among the foreign born are another source of variation. Above, we pointed out that much of the research literature focusing on immigrant educational attainment highlights the ethnic and racial differences among nativity groups. Data displayed on Table 3 show that both native- and foreign-born whites and Asians are overrepresented in the four-year programs, while African Americans and Hispanics from both nativity groups are concentrated in the community colleges and two-year programs.

Assessment Test Results

According to the new CUNY policy, students who do not pass the CUNY assessment tests and therefore require remediation must enroll in the two-year programs.

But the policy includes a significant exception that has important implications for the enrollment of immigrants: students categorized as English as a Second Language (ESL) students are exempt from this requirement. Thus ESL students who failed assessment tests would still be able to enroll in the four-year schools. By examining passing rates on assessment tests, we can get an idea about how that policy, and the ESL exception, will interact with the growing immigrant enrollment at CUNY.

Data presented on Table 4 suggest that the two-year programs already enroll disproportionately more students with low test scores. Only 40 percent of two-year entrants pass the math test and about 45 percent pass the reading test. At the same time, these data make it obvious why the policy is so controversial. Although the four-year entrants do better than their two-year counterparts, over one-fifth of the four-year entrants fail the math test and almost a third fail the reading test. These data also show that the two-year programs tend to enroll native students with low math scores and immigrant students with low reading scores. Thus immigrants in the two-year programs have low passing rates for the reading test and high passing rates for the math tests, probably reflecting language problems among the immigrants.[4] Disaggregating the immigrant groups by race and ethnicity shows that white, Asian, and Hispanic four-year entrants do particularly poorly on the reading test. In contrast, the Asian four-year entrants do very well on the math test while the Hispanic immigrants have low scores on the math test as well as the reading test.

We draw two broad conclusions from these assessment data. First, as expected, the two-year schools already enroll a disproportionate number of students with low assessment scores. Second, even though many of the foreign-born students in the four-year schools do not pass the assessment tests, their deficiencies are most pronounced on the reading tests. Many of them are ESL students and therefore will be exempt from the new policy. As a result we do not expect to see a significant shift in immigrant students from the four-year to the two-year programs.

Allocation of Students in Two- and Four-Year Programs

In this section, we shall make a more comprehensive examination of the determinants of enrollment in either a two- or four-year CUNY program. Our single variable comparisons so far suggest that ethnicity is a much more important predictor than nativity of whether CUNY entrants will enter a two- or a four-year program. It may

be that ethnicity is related to another variable that we have not considered and that that variable is what is driving these results. Alternatively, nativity status may be negatively related to some other important variable and therefore nativity's actual influence on enrollment could be obscured.

In this analysis, we use the 1990 entering cohort primarily because we have data on a wider set of demographic variables, based on the special survey of that cohort conducted by CUNY, than is available for later cohorts. In addition to the variables that we have already considered—nativity, ethnicity, and test scores, we also consider the influence of the variables listed on Table 5. These additional variables include general demographic characteristics such as age and gender, measures of background socioeconomic factors, and competing commitments, such as employment and parenthood.

Community colleges often attract students who have other commitments and responsibilities. Not only are community colleges almost always cheaper than four-year colleges, but they often schedule courses in such a way as to facilitate adult participation. Indeed, nationally and in New York, community college students tend to be older. For example, in 1997, three quarters of all CUNY first-time, four-year program entrants were 18 or younger, while only 42 percent of the associate degree entrants were that young. Employment, either full- or part-time, and parenting a child under age 18 comprise competing commitments. Although certainly many working parents enroll in four-year colleges, community colleges tend to cater much more to the needs of this category of students. And indeed, our data show that community college students are more likely to be working and to have children.

In addition to the test scores, which we standardized as z scores in order to allow comparison between the tests, we included other variables that would reflect the type of educational preparation received by the students. Research has shown that a General Equivalency Degree (GED) is not in fact equivalent to a high school diploma (Cameron & Heckman, 1993). Therefore, we would expect that students with GEDs would be more likely to enroll in a community college. We also included dummy variables to control for the educational background of the student's parents (coded to reflect the highest level attained by either parent). Students whose parents have more education tend to do better in school. Thus we expected that higher levels of parental education would be associated with a greater likelihood of entry into a four-year program. And, it is a longstanding finding of educational research that wealth also tends to be associated with higher school performance, net of other factors. We therefore included controls for household income.[5]

The results of the logistic regression of the determinants of whether a first-time, first-year student starts in a two-year or four-year program are displayed on Table 6. In this regression, positive coefficients indicate that the variable increases the probability of enrolling in a four-year program. The analysis shows that foreign-born students who graduated from a U.S. high school are more likely to enroll in a four-year program, while those who graduated from high school abroad are more likely to enroll in a two-year program. Most of the control variables have the expected influence. Those who earned a GED, older students, those with jobs, and those with childcare responsibilities, are all more likely to enroll in a community college even after controlling for all of the other included variables. The influence of scores on math and reading assessments has the expected sign. Women and students who state that they want a BA are more likely to enroll in a four-year program.

Introducing the control variables has interesting effects on the influence of ethnicity. African Americans are still much more likely than whites (the comparison group) to enroll in a two-year program. But surprisingly, there is no statistically significant effect for Hispanics or Asians. This suggests that the Hispanic concentration in community colleges is a result of their low test scores, rather than some particular "Hispanic" effect. Similarly, the Asian overrepresentation in four-year programs can be explained by the characteristics of the Asian students without resorting to an "Asian culture" argument.

Therefore, to some extent the CUNY community colleges are playing their expected role of providing access to higher education for the city's immigrant population, especially those with very weak language skills, but the four-year schools also play that role, although somewhat less frequently for the foreign born who took their secondary education abroad. It probably makes more sense to think of CUNY as a whole as an extremely important immigrant-educating institution. While we have identified some differences in the enrollment of immigrants in the two- and four-year programs, these differences are probably less important than the overall role of CUNY. On the other hand, implementation of the CUNY policy on remediation will further concentrate immigrants, especially those with foreign high school diplomas, in the two-year programs.

Another important conclusion is that nativity is at least as important as race and ethnicity in determining the choice between these two types of schools. This conclusion is in conflict with the general consensus in the research literature that tends to downplay nativity and emphasize ethnicity. On the other hand, the analysis suggests that African

American students have a statistically significant lower probability of enrolling in a four-year program. We shall return to this result later in the paper.

Educational Outcomes for CUNY Native and Foreign-Born Two-Year Entrants

In this section we focus on those CUNY students who start in two-year programs. Fundamentally we would like to know how well immigrants are able to use the CUNY community colleges to achieve their economic and educational goals. Since our data do not include any information on eventual economic outcomes, we focus here on educational outcomes and consider, from this point of view, what is the most appropriate measure of success for a community college student. Community college advocates and critics have argued about this for many years. As we shall see, after eight years, only 23 percent of the students who started in a two-year program have earned an associate degree. Certainly a 23 percent graduation rate for a high school would be considered disastrously low. On the other hand, many community college students transfer to a four-year institution without earning an associate degree, and such students should not be seen as a college "dropouts"; indeed, most community college personnel would see a successful transfer, even without a degree, as a successful outcome for the college. Moreover, community college advocates argue that many of their students are looking for specific skills that can be learned in a set of specific courses and that they have no intention of or need to complete a degree.[6] From this point of view, low completion or even transfer rates are more reflections of the diversity of roles taken on by these institutions than they are an indication of institutional failure.[7]

Because of the ambiguity about the nature of a successful community college experience, we analyze five different outcome variables. In the first, we count the number of degree credits earned by the students, regardless of whether they are taken at a community or a senior college. Second, we consider simply whether or not the student has earned an associate degree. Third, we measure whether the student has transferred to a four-year program or institution (regardless of whether that degree is ever earned). Fourth, we create a category in which we pool those who earned an associate degree and those who transferred. Finally, we look at students who have transferred to a BA program and try to determine the characteristics that promote successful completion of that degree. We address the problem of variation in students' educational goals by controlling for stated aspirations.[8]

Table 7 displays the distribution of credits earned (a student earns credit if he or she completes a course with a passing grade). The foreign-born students earn significantly more credits than the native born. Only 30 percent of the foreign born who graduated from foreign high schools earn 20 credits or less, compared to over 48 percent of the native born. In contrast, 48 percent of the foreign born who attended a foreign high school earned 60 credits (enough for an associate degree) while less than 30 percent of the native born accumulated 60 credits.

Table 8 presents degree and transfer data. On all of these measures, the foreign-born graduates of foreign high schools are the most successful, while the native born are the least successful. The experience of the foreign born with U.S. high school diplomas lies in the middle. The most dramatic difference among these three groups is in the rate of associate degree attainment, not in the transfer rate. On the other hand, of those who did transfer—that is, those who subsequently enrolled in a bachelor's degree program—42 percent of the foreign born who attended a foreign high school actually earned a BA degree, while only 35 percent of the native born earned that degree.[9]

One interpretation of these results is that immigrants who graduated from high school abroad arrive with a reasonably strong underlying level of education, but with language deficiencies. As we have seen, these immigrants have relatively high scores on the math assessment test. They then use the community college to strengthen their language skills. Once that is achieved, they are able to accumulate credits and are more likely to earn degrees. This suggests that many of these immigrants did not come from the poorest social classes in the sending countries. The two-year programs allow them to overcome one particular weakness in their preparation. Natives who have a similar type of education may be more likely to start directly in a four-year program.

On the other hand, overall the data still show a low rate of degree completion. Even though over three-quarters of the students who enter the two-year program state that they aspire to at least a BA, eight years after enrolling, only one-fifth have enrolled in a bachelor's program. Although the foreign born in general do have more educational achievement, their chances of transfer are not much higher than those for natives.[10]

Are these results the direct influence of some factors associated in particular with nativity, or are they the result of the characteristics that the immigrants happened to have? Tables 9-12 present multivariate analyses of the determinants of credits earned, associate degree completion, transfer to a BA program, and BA completion (for those who transferred). These analyses control for other factors that might influence credit accumulation or the probability of graduation or transfer. In these regressions we use the

same control variables as we used in the analyses of students' starting a two- or four-year program. They included measures of students' alternative commitments (part-time status, work, and childcare responsibilities), SES (parental education, and students' participation in SEEK or College Discovery), stated aspirations, and measures of educational preparation (GED and test scores). Some CUNY institutions give both two- and four-year degrees. In these analyses of educational outcomes, we include a dummy variable that indicates whether the student went to one of these "hybrid" institutions. Analysts argue that combining two- and four-year programs in one institution facilitates transfer by obviating the need to apply to a new institution and move to a new location (Dougherty, 1994).

The results of this multivariate analysis are partially consistent with the two-variable comparisons presented on Tables 7 and 8. Immigrants who attended high school abroad accumulate more credits and are more likely to complete an associate degree than natives. They are *not* more likely to transfer, and if they do transfer, they are not more likely to earn a BA than natives. But once we add the controls, immigrants who graduated from high school in the U.S. appear to have as much educational success (indeed more) than those who completed high school abroad. That is, the foreign-born, U.S. high-school graduates earn more credits and are more likely to complete an associate degree, or to transfer, than natives. The lower achievement of this group suggested by Tables 7 and 8 appears to result from their characteristics rather than an unmeasured difference between the graduates of U.S. and foreign high schools.

Interestingly, race and ethnicity appear to have little effect on these measures of educational success. Hispanics do earn fewer credits and African Americans are slightly less likely to transfer, but these variables do not influence the probability of their completing an associate degree. The most significant result is that African Americans and Hispanics who transfer have a lower probability than whites of earning a BA.

These tables provide some interesting results concerning the effects of attending a school that combines two- and four-year programs (hybrid colleges). As expected, enrolling in a hybrid college will increase the probability of transfer, but it will actually decrease the probability of completing an associate degree. Moreover, once a student at a hybrid college has transferred to a four-year program, he or she does have a higher probability of earning a BA.

Does the dramatic increase in immigrant enrollments at CUNY have an impact on the enrollments of native-born students? Discussions of immigration policy often focus on the potential competition between immigrants and natives. While much of this discussion is focused on employment, social services have also received some attention. Analysts have asked whether the arrival of immigrants in some sense crowds out natives from education or other services. It is very difficult to make this type of argument in the case of CUNY. Indeed, CUNY's overall enrollments are considerably lower than they were in the mid-1970s (prior to the implementation of tuition). Clearly the university has the capacity to expand if students present themselves. To the extent that the Schmidt recommendations reduce enrollments in the four-year schools, there will be even less potential conflict between those groups. Indeed, CUNY four-year school administrators who want to prevent a decline in their enrollments will be particularly interested in recruiting more foreign-born students. And there is nothing in our analysis of the patterns of enrollments in the two- and four-year schools that would suggest the development of any conflict or competition between immigrant and native students.

CONCLUSION

Perhaps the most striking conclusion from this paper is that the immigrant enrollment at CUNY has grown so rapidly. Certainly, enrollments at CUNY reflect the immigrant character of the city's population: the foreign born are actually overrepresented among the university's students relative to their share of the population. While the foreign born share of the population grew from just under 30 percent in 1990 to just over 40 percent in 1999, that share of CUNY enrollments grew from 33 percent in 1990 to 48 percent in the seven years ending in 1997. Comparable data for 1999 undoubtedly would show a continued growth in immigrant enrollments at CUNY. Thus, in under a decade, the university has undergone a profound change in the nature of its student body.

What about the relative roles of two- and four-year programs? The new CUNY policy will, if fully implemented, increase the importance of the two-year programs. Between one-fifth and one-third of the students in the four-year programs fail at least one of the assessment tests. But the ESL exception will mitigate the effect of the policy,

especially for the foreign born who attended foreign high schools. It seems likely that the policy will actually increase the concentration of *native-born* African Americans and Hispanics in the community colleges, and, as we have shown, these students are already overrepresented in the community colleges. Immigrants, on the other hand, especially those with a U.S. high school education, are, contrary to our expectations, somewhat more likely to enroll in a four-year rather than a two-year program.

What about educational outcomes? Just over a fifth of the two-year entrants earn an associate degree and about same number transfer to a four-year program. Less than 10 percent earn a BA within eight years of initial enrollment, although over 70 percent stated that they aspire to complete at least a BA. But immigrant two-year entrants do appear to have higher levels of educational achievement than natives who enter the same programs. Immigrants earn more credits and are more likely to complete an associate degree, although they are not more likely to transfer or to complete a BA once they have transferred. Our explanation for this is that, for many immigrants, underlying educational preparation is considerably better than the assessments suggest, although it is to some extent "masked" by problems with language skills. But their experience in the community colleges gives them a chance to strengthen those skills, and eventually the influence of their stronger educational preparation asserts itself, as indicated by greater credit accumulation and higher graduation rates. According to this story, the community colleges play a classic adjustment role by providing a chance for immigrants to catch up by strengthening their weak English language skills. But this effect is not strong enough to propel them to a higher probability of transfer.

We also examined the enrollment patterns of racial and ethnic minorities in CUNY, finding Hispanics and African Americans particularly concentrated in community colleges; implementation of the CUNY remediation policy would further concentrate them in the two-year programs. But contrary to the consensus in the research literature, we found that minority status was less important than nativity in determining educational achievement. African Americans and Hispanics did have a lower probability of earning a BA if they transferred, but that was the only strong effect of race and ethnicity on any of our outcome measures. Thus these groups certainly have a low chance of earning a BA, both because they enroll disproportionately in two-year programs, and, if they do transfer, have less chance of finishing. In another surprising result, we found that after controlling for test scores and personal characteristics, for the most part, there was no special Asian effect.

High levels of immigrant enrollments are not new at CUNY, but the rapid growth of those enrollments during the last decade is unprecedented. This increase in the number of foreign-born students has undoubtedly increased enrollments in the university as a whole, and should therefore probably be seen as a positive development. Certainly the trend will create more pressure on the services in the university designed to strengthen language skills and provide developmental education. But this service is increasingly a core activity of urban public universities, and community colleges in particular. One trend that we have identified that deserves more attention is the continued and, we predict, growing concentration of native African Americans and Hispanics in the two-year programs. Of course enrollment in community colleges provides important opportunities for many students, but as minorities become more integrated into the overall society and economy, we would expect to see their distribution among different educational institutions reflect that distribution in the society as a whole. At least we would like to know more about why these groups continue to be overrepresented in the two-year programs, even after controlling for test scores and other demographic characteristics. In the end, it is important that the effort needed to adjust to the rapid increase in the immigrant enrollments not divert attention from the continued educational problems faced by many native groups.

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APPENDIX

Table 1:
Nativity and Type of Program

1997

	U.S. Born	Foreign Born/ U.S. HS	Foreign Born/ Foreign HS	Total
BA Entrants (Row Percent)	50.2%	42.4%	7.5%	100.0%
(Column Percent)	36.9%	41.5%	33.5%	38.4%
AA Entrants (Row Percent)	53.4%	37.3%	9.3%	100.0%
(Column Percent)	63.1%	58.5%	66.5%	61.6%
Total (Row Percent)	52.2%	39.3%	8.6%	100.0%
(Column Percent)	100.0%	100.0%	100.0%	100.0%

1990

	U.S. Born	Foreign Born/ U.S. HS	Foreign Born/ Foreign HS	Total
BA Entrants (Row Percent)	67.2%	27.0%	5.8%	100.0%
(Column Percent)	39.0%	40.5%	30.2%	38.7%
AA Entrants (Row Percent)	66.5%	25.1%	8.4%	100.0%
(Column Percent)	61.0%	59.5%	69.8%	61.3%
Total (Row Percent)	66.8%	25.8%	7.4%	100.0%
(Column Percent)	100.0%	100.0%	100.0%	100.0%

Table 2:
Country/Region of Origin of Foreign-Born Students

Fall 1990 First-time Freshmen

	Bachelor's Degree Entrants	Associate Degree Entrants	Total
	%	%	%
China	**14.9**	7.1	10.1
Other Asia/Pacific Islands	**17.5**	8.8	12.1
South/Central America	8.4	**13.5**	11.5
Dominican Republic	7.5	**10.2**	9.1
Guyana	5.5	5.1	5.2
Haiti	6.1	**8.8**	7.8
Jamaica	7.0	**11.1**	9.5
Puerto Rico	7.1	**10.3**	9.1
Other Caribbean	5.9	**8.9**	7.8
Russia	**7.8**	5.3	6.3
Other	12.5	10.9	11.5
Total	100.0	100.0	100.0

Table 3:
Race/Ethnicity by Degree of
Initial Enrolment and Nativity
Fall 1997 First-time Freshmen
(Numbers in **Bold**denote overrepresentation)

	Associate Degree%	Bachelor's Degree %	Total
Native Born Total	63.1	36.9	100.0
White	56.9	**43.1**	31.4
Black	**72.0**	28.0	31.2
Hispanic	**64.1**	35.9	32.9
Asian	36.8	**63.2**	4.6
Foreign Total	59.9	40.1	100.0
White	44.5	**55.5**	17.1
Black	**69.1**	30.9	30.3
Hispanic	**69.1**	30.9	30.0
Asian	47.1	**52.9**	22.5

Table 4:
CUNY Assessment Passing Rates
for Nativity Groups

1997

	Native Born	Foreign Born/ U.S. HS	Foreign Born/ Foreign HS	Total
Math				
Two-year entrants	38.1%	41.3%	48.1%	40.3%
Four-year entrants	78.0%	78.4%	**69.3%**	77.5%
Reading				
Two-year entrants	**58.5%**	33.5%	22.2%	45.0%
Four-year entrants	81.3%	57.1%	**41.2%**	68.2%

Table 5:
Mean Values of Independent Variables

	All Entrants	Associate Degree Entrants
Foreign-born, US HS	0.25	0.24
Foreign-born, Foreign HS	0.07	0.07
Black	0.32	0.38
Hispanic	0.25	0.25
Asian	0.10	0.07
GED	0.14	0.19
Educational Aspiration (BA or higher=1)	0.83	0.77
Sex (Female=1)	0.58	0.57
Age	21.34	22.20
Employment PT (Fall '90)	0.55	0.52
Employment FT (Fall '90)	0.16	0.20
Enrolled PT (Part-time in F90=1)	0.17	0.21
Parent (Supports 1+ child 18 or younger)	0.12	0.17
Parents' Education (Highest Value)		
High School Degree	0.30	0.31
Some College	0.16	0.16
College Degree or Higher	0.27	0.25
Household $ 16K to 31K	0.25	0.25
Household $ 31K or More	0.23	0.22
Household $ Missing	0.24	0.26
Hybrid (Started at "hybrid" college=1)	0.23	0.31
CD SEEK (Entered via CD or SEEK=1)	0.16	0.12
Math Test (Range is 1 to 40)	23.9	21.3
Reading Test (Range is 1 to 25)	13.7	12.6

* This table includes all of the observations that we used in the regressions. Observations that had missing values were eliminated. For the simpler crosstabs such as Table 3, we only eliminated observations for which there were missing data for the relevant variables. As a result, there are small discrepancies between Table 5 and some of the crosstabs.

Source: CUNY Fall First-time Freshman Cohort Files

Table 6:
Probability of Entry into a Bachelor's Program: Fall 1990 First-time Freshmen

	Model 1			Model 2			Model 3		
Variable	**B**	**SE**		**B**	**SE**		**B**	**SE**	
IMMIGRANT ORIGIN									
Foreign Born, US HS	0.13	0.06	3.1% *	0.31	0.09	7.0% ***	0.32	0.09	7.2% ***
Foreign Born, Foreign HS	-0.25	0.11	-5.8% *	-0.16	0.15	-3.4%	-0.35	0.16	-6.8% *
RACE									
Black				-0.43	0.09	-8.5% ***	-0.38	0.09	-7.2% ***
Hispanic				-0.04	0.09	-0.9%	-0.01	0.10	-0.2%
Asian				0.00	0.13	0.1%	0.00	0.13	0.1%
GED				-0.69	0.11	-12.7% ***	-0.70	0.11	-12.4% ***
Aspirations				1.01	0.10	24.4% ***	1.02	0.10	24.4% ***
Female				0.36	0.07	8.2% ***	0.37	0.07	8.3% ***
Age Min 18				-0.03	0.01	-0.6% **	-0.03	0.01	-0.6% ***
EMPLOYMENT, F90									
Part-Time				-0.16	0.08	-3.4% *	-0.17	0.08	-3.5% *
Full-Time				-0.33	0.12	-6.6% **	-0.33	0.12	-6.5% **
Part-Time Enrolled, F90				-0.13	0.11	-2.7%	-0.11	0.11	-2.3%
KIDSLE18				-0.73	0.14	-13.3% ***	-0.72	0.14	-12.7% ***
PARENTS' ED									
High School Degree				-0.14	0.09	-3.0%	-0.16	0.09	-3.2%
Some College				-0.10	0.11	-2.1%	-0.11	0.11	-2.3%
College Degree				-0.05	0.10	-1.1%	-0.07	0.10	-1.5%
HOUSEHOLD INCOME									
16K to 31K				-0.17	0.10	-3.5%	-0.16	0.10	-3.2%
31K +				-0.14	0.10	-3.0%	-0.13	0.10	-2.7%
Missing Income				-0.45	0.10	-8.8% ***	-0.44	0.10	-8.3% ***
Hybrid College				-1.22	0.09	-19.5% ***	-1.23	0.09	-18.7% ***
CDSEEK				1.27	0.10	30.6% ***	1.29	0.10	31.0% ***
Assessment Tests									
Math				0.73	0.04	17.4% ***	0.72	0.04	16.8% ***
Reading				0.45	0.04	10.3% ***	0.57	0.06	13.1% ***
Interactions									
FB, US HS*Reading							-0.20	0.08	-4.1% *
FB, FRGN HS*Reading							-0.53	0.13	-9.7% ***
Constant	-0.40	0.03	40.1%	-0.78	0.15	31.3%	-0.85	0.16	29.9%
-2 Log Likelihood	7344.181			5556.097			5537.63		

N=5413 (Unweighted)

* Significant at the 10 Percent level

** Significant at the 5 Percent level

*** Significant at the 1 Percent level

B = Coefficient

SE = Standard Error

Table 7:
Credits Earned by Place of Birth and High School

Fall 1990 First-time Freshman Associate Entrants

Credits Earned	U.S. Born %	Foreign Born/ U.S. HS %	Foreign Born/ Foreign HS %	Total %
0 thru 20	48.3	37.7	30.0	44.1
21 thru 60	23.0	23.1	21.7	23.0
60 or More	28.6	39.3	48.3	32.9
Total	100.0	100.0	100.0	100.0

Table 8:

Educational Outcomes by
Place of Birth and High School

Fall 1990 First-time Freshmen Associate Entrants

Educational Outcome	U.S. Born %	Foreign Born/ U.S. HS %	Foreign Born/ Foreign HS %	Total %
Earned Associate Degree	20.0	27.9	32.1	23.0
Enrolled in Bachelor's Program	19.7	23.7	23.1	21.0
Earned Associate Degree or Enrolled in Bachelor's Program	30.7	37.2	43.5	33.4
Earned Bachelor's Degree	6.8	9.1	9.7	7.6
Earned a Bachelor's Degree After Transferring	34.5	38.4	42.0	36.2

Table 9:
Credits Earned
1990 Entering Cohort

OLS Regression

	Model 1			Model 2		
Variable	**B**	**S.E.**		**B**	**Std. Error**	**Sig.**
(Constant)	40.0	0.91		40.9	3.21	0.000
Foreign Born U.S HS	10.7	1.81	***	13.5	1.91	0.000 ***
Foreign Born Foreign HS	17.4	2.93	***	11.3	3.19	0.000 ***
Black				-3.0	1.97	0.087
Hispanic				-6.5	2.12	0.003 **
Asian				-0.6	3.31	0.800
GED				-7.7	2.01	0.000 ***
Aspirations				4.4	1.76	0.018 *
Gender F=1				8.7	1.50	0.000 ***
AGE				0.3	0.15	0.138
Employed PT				-1.1	1.74	0.614
Employed FT				-10.6	2.35	0.000 ***
Enrolled PT				-14.0	2.01	0.000 ***
Household Income						
16K to 31K				2.8	2.07	
31K +				5.9	2.28	**
Income Missing				-0.9	2.05	
Parents' Education						
Parent HS Degree				-3.7	1.96	0.270
Parent Some College				-2.9	2.38	0.759
Parent College Degree				-4.1	2.09	0.069
Hybrid College				1.5	1.57	0.292
CD/SEEK				2.9	2.37	0.356
Assessment Tests						
Math				8.4	0.82	0.026 ***
Reading				2.8	0.85	0.013 ***
Adjusted R-Square	018			124		

N=3146 (Unweighted)

B = Coefficient

SE = Standard Error

* Significant at the 10 Percent level

** Significant at the 5 Percent level

*** Significant at the 1 Percent level

Table 10:
Associates Degree

Logistic Regression

	Model 1			Model 2		
Variable	**B**	**S.E.**	**%**	**B**	**S.E.**	**%**
Foreign Born US HS	0.44	0.10	8.3***	0.58	0.11	12.1***
Foreign Born Foreign HS	0.64	0.15	12.5***	0.43	0.18	8.7**
Black				-0.17	0.11	-3.0*
Hispanic				-0.12	0.13	-2.2
Asian				-0.25	0.18	-4.3
GED				-0.25	0.13	-4.3
Aspirations				-0.23	0.10	-3.9*
Gender (F=1)				0.48	0.09	10.0***
AGE				0.02	0.01	0.4*
Employment FT				-0.55	0.15	-8.8***
Employment PT				-0.07	0.10	-1.4
Enrolled PT				-0.42	0.13	-7.0***
Household Income						
16K to 31K				0.06	0.12	1.2
31K +				0.26	0.13	5.0
Income Missing				-0.10	0.12	-1.7
Parents' Education						
Parent HS Degree				-0.06	0.12	-1.0
Parent Some College				-0.21	0.12	-3.7
Parent College Degree				-0.07	0.12	-1.3
Hybrid College				-0.41	0.10	-6.8***
CD SEEK				0.24	0.14	4.7***
Assessment Tests						
Math				0.38	0.05	7.7***
Reading				0.13	0.05	2.5*
Constant	-1.33	0.05	20.9	-1.13	0.19	24.5
-2 Log Likelihood	3526.348			3314.51		

N = 3146 (Unweighted)
B = Coefficient
* Significant at the 10 Percent level
SE = Standard Error
** Significant at the 5 Percent level
*** Significant at the 1 Percent level

Table 11:
Transfer to a BA Program

Logistic Regression

	Model 1			Model 2			
Variable	**B**	**S.E.**	**%**	**B**	**S.E.**	**Sig**	**%**
Foreign Born US HS	0.28	0.1	5.0**	0.44	0.12	0.0001	6.3***
Foreign Born Foreign HS	0.24	0.16	4.2	0.14	0.19	0.2869	1.8
Black				-0.02	0.12	0.7407	-0.2
Hispanic				-0.07	0.13	0.5293	-0.9
Asian				0.33	0.18	0.0495	4.5
Constant	-1.35	0.05	20.6	-1.79	0.20		14.4
-2 Log Likelihood	3416.405			3200.81			

N=3146 (Unweighted) B = Coefficient

* Significant at the 10 Percent level SE = Standard Error

** Significant at the 5 Percent level

*** Significant at the 1 Percent level

Note: Same controls used as in Table 10 but not shown here

Table 12:
Associate Degree or Transfer
1990 Entering Cohort

Logistic Regression

	Model 1				Model 2			
Variable	**B**	**S.E.**	**%**		**B**	**S.E.**	**Sig**	**%**
Foreign Born US HS	0.33	0.09	7.5	***	0.53	0.10		12.1***
Foreign Born Foreign HS	0.61	0.14	14.4	***	0.48	0.17		10.9**
Black					-0.19	0.10		-3.8
Hispanic					-0.14	0.11		-2.9
Asian					-0.04	0.17		-0.8
Constant	-0.77	31.6	31.6		-0.88	0.17		29.4
-2 Log Likelihood	4150.801				3867.97			

N=3146 (Unweighted) B = Coefficient

* Significant at the 10 Percent level SE = Standard Error

** Significant at the 5 Percent level

*** Significant at the 1 Percent level

Note: Same controls used as in Table 10 but not shown here

Table 13:
Of Those Who Transferred,
Percent Who Earned a BA

1990 Entering Chort

Logistic Regression

	Model 1			Model 2			
Variable	**B**	**S.E.**	**%**	**B**	**S.E.**	**Sig**	**%**
Foreign Born US HS	0.21	0.18	5.0	0.35	0.22	0.0652	8.8
Foreign Born Foreign HS	0.39	0.28	9.3	0.39	0.35	0.1690	9.6
Black				-0.73	0.21	0.0003	-17.1 ***
Hispanic				-1.11	0.25	0.0000	-24.3 ***
Asian				-0.12	0.30	0.8295	-3.1
Constant	-0.65	0.1	34.2	-0.13	0.40		46.9
-2 Log Likelihood	935.909			880.563			

N = 773 (Unweighted) B = Coefficient

* Significant at the 10 Percent level SE = Standard Error

** Significant at the 5 Percent level

*** Significant at the 1 Percent level

Note: Same controls used as in Table 10 but not shown here

ENDNOTES

[1]. An analysis was performed by Andrew A. Beveridge using the 1999 New York City Housing and Vacancy Survey and the 1990 Census Public Use Micro Sample and published in the *New York Times* on July 24, 2000.

[2]. These data come from the CUNY Fall Freshman Cohort Files. Most of the data used in this paper come from those files.

[3]. Puerto Ricans are citizens of the U.S. but in this paper we are treating them as foreign born.

[4]. Among all immigrant groups, black immigrants score highest on the reading test. This is presumably because many black immigrants are from the English-speaking Caribbean.

[5]. The perils attaching to self-reported measures of income are well known, beginning with a particularly high incidence of non-response. Approximately a quarter of those surveyed in the1990 cohort failed to answer this question (Table 5), and we have therefore included non-response as a category. It should be noted that we introduce income categories only for the purpose of attempting to control for the partial effects associated with the variables of interest; we do not seek to draw any conclusions concerning the influence of income or wealth.

[6]. Kane and Rouse (1995) and Grubb (1999) show that there is some economic value to completing credits, even if the student does not complete a degree. This suggests that not completing a degree should not necessarily be considered an educational failure.

[7]. See Bailey and Averianova (1998) for a discussion of the implications of the multiple missions of community colleges.

[8]. The survey asked students to check a college degree (or a residual category) from a list, in response to the question "What is the highest degree you want to earn?" The subsequent question asked them to estimate the chances that they would actually attain this degree. Responses to the latter question were incorporated into each of the multivariate equations in this paper, but because they did not increase predictive power, they have been removed.

[9]. CUNY data do not track students who continue their postsecondary education at non-CUNY institutions. If the native born are much more likely than the foreign born to transfer out of CUNY and enroll in another college, then the results reported here may exaggerate the difference between the two groups. The CUNY Office of Institutional Research and Analysis did try to ascertain the extent of these transfers for the 1994 entering cohort. They did this through the National Student Loan Clearinghouse (NSLC). Students who have loans are often excused from paying them back while they are still enrolled in college. One role of the NSLC is to determine whether a student who attended one college (and owes money on a loan taken out to pay that colleges tuition) is now enrolled in another college (and therefore

does not have to start repayment). According to data collected from this source, of all the first-year students enrolled in two-year programs in 1994, by 1998, 7.3 percent of the native born had transferred out of CUNY and 7 percent of the foreign-born, U.S. high school group, and 5.9 percent of the foreign-born, foreign-high-school group had transferred, and neither earned an AA, nor transferred to a four-year program. If the volume of these transfers for the 1990 cohort were the same as those for the 1994 cohort, these transfers could explain at most about a third of the difference between the native- and the foreign-born transfer rates shown in Table 8 or about a tenth of the difference in graduation rates shown on the table.

[10]. In contrast, about 35 percent of CUNY students who started in four-year programs in 1990 actually earned a BA in eight years. This effect remains even after controlling for demographic characteristics, test scores, and aspirations. And there are no statistically significant differences between natives and immigrants in the probability that four-year entrants will earn a BA.